GSL Science Panel Coordination

ATTENDEES:	Theresa Presser	Theron Miller
	Don Hayes	Harry Ohlendorf
	Bill Wuerthele	Jeff DenBleyker
	Brad Marden	Nathan Darnall
	Bill Adams	Joy Emory
	Bill Moellmer	Lynn de Freitas
FROM:	Jeff DenBleyker	
DATE:	February 22, 2007	

Review of Avian Blood Memorandum

Harry reported that LET completed a satisfactory analysis of 3 blood SRMs that USGS provided and that LET in fact does not have any surplus blood samples from sampling completed in summer 2006. LET will not be able to send remaining material from previously identified blood samples to the USGS for verification as discussed. This was of concern to the Panel as the elevated Se concentrations still cannot be explained in light of other data. The Panel generally agreed that while this issue may not contribute directly toward establishing the water quality standard it is an issue that should be investigated further.

The Panel discussed how the verification question might be addressed. After discussion, the Panel agreed to have LET analyze both Se and Hg in the liver and blood from 10 eared grebes sampled at one location upon arrival, 10 eared grebes sampled at that location just prior to leaving, 10 goldeneye ducks sampled just prior to leaving (with qualification that ducks may be feeding at locations other than the open water), and a number of nesting birds in the May/June timeframe. The Panel will determine at the March science Panel meeting which species and the number of birds that should be sampled during May/June. CH2M HILL will finalize the avian blood memorandum with these recommendations. CH2M Hill indicated that the budget should allow for these analyses.

Review of Bill Johnson's Proposal for Hood Experiment

Theron reviewed the objectives and need for the project with the Panel, who agreed and recommended that the experiment be completed.

Review of Martin Grosell's Proposal for Kinetics Study

Below is a summary of key discussion items:

1. Contractual mechanism is nearly ready; we simply need a final workplan to finalize contract.
2. Is selenate the primary form representative of water in the GSL? Is there information that confirms this? It is critical that food be prepared so that it is reflective of the lake. There was agreement that while speciation data representative of algae in the GSL are

not available, selenate is thought to be the primary form that is contributed to the GSL and is located within the water column of the GSL. Without further sampling, this is the best information we have and is a reasonable assumption. Brad Marden will attempt to sample algae in the next week so that Jason Unrine can complete speciation of Se in the sample.

3. Need to monitor Se concentration during efflux experiment. There is a possibility of the loss of Se via brine shrimp urinary tract.
4. Need to look at pre-exposure of brine shrimp. Exposure doesn't seem to affect dissolved efflux kinetics.
5. Why is artificial GSL water used? This is important to the experiment because we can control the concentration of Se in the artificial water.
6. During culturing, get concentration of Se in yeast.
7. Verify concentration of shrimp in stocking solution. There is concern that having brine shrimp too crowded may introduce stresses that are not representative of the GSL, i.e., mortality rate might increase due to stress, filtering rate of shrimp might be reduced, ammonia/nitrate/nitrite concentrations might elevate, not adequate food source, etc. Goal should be to minimize concentration of shrimp as much as practicable and monitor for the other factors such as ammonia, filtering rate, etc.
8. How much water can shrimp filter? Gary Belovsky may have this information or Martin can determine it in the lab.
9. Need to monitor ratio of male/female shrimp used in the experiment. Gender can influence stress incurred by shrimp. Use a 50:50 ratio.
10. Is the use of one salinity concentration adequate for the experiment to be representative of the GSL? It was agreed that sulfate does influence the uptake of dissolved Se – higher sulfate results in lower Se uptake. It was agreed that the shrimp's metabolic rate is affected by salinity – higher metabolic rate and higher uptake with higher salinity. The salinity range in the GSL can range from 95 to 180 g/L with 145 g/L considered fairly typical. It was decided that a preliminary range-finding study will be completed with salinity values of 100 and 160 g/L to bracket the range.
11. How long can algae cells live? Nobody on the call knew the answer.
12. The Panel will confirm comments on the existing workplan by Wednesday, February 28. David Buchwalter and Jeff DenBleyker will discuss and finalize comments with Martin Grosell. Once the workplan represents the key elements, costs and schedule, we can finalize contract and work out final details as we go.

Review of Draft Threshold Values Memo

The Panel agreed that the memorandum was ready to be finalized by incorporating changes based on comments from Anne Fairbrother and Bill Adams. CH2M HILL will finalize and distribute.

Misc. Items

Next Science Panel meeting will be in Salt Lake City on March 21-23. March 21 and 22 will be full days. The Science Panel will have a joint meeting with the Steering Committee on the morning of March 23. Lunch will be provided for all on the 23rd and the meeting will end after lunch.

Bill Adams asked for summary tables from each PI at least 1 week prior to the next Science Panel meeting. This is in addition to the existing database. Reports are expected in March.